

SYSTEMS AND METHODS FOR CONGESTION CONTROL IN A WIRELESS MESH NETWORK

Abstract

[46] Systems and methods for reducing congestion in a wireless communication network are provided. In one aspect, an improved MAC layer protocol is provided that allows channel switching for data communications over a wireless network on a frame by frame basis allowing increased use of spectrum and significantly reducing congestion. Additionally, throughput is increased and battery life is conserved by reducing the power level for an RTS message to the minimum power needed to reach the recipient node. The corresponding CTS message is then sent by the recipient node and the range of the CTS message is sufficient to inform other nodes in the network that the recipient is not available for communication. This method allows other nodes in the network to remain free to communicate with each other. Moreover, the minimum power level needed to send an RTS message to each node may be maintained in a local routing table or other data storage area on the wireless communication device.